


Ch 23-Organic Families and Reactions


<http://www.youtube.com/watch?v=mAjrnZ-znkY>



Wöhler

First to  
synthesize  
urea...

$\text{H}_2\text{NCONH}_2$



Berzelius

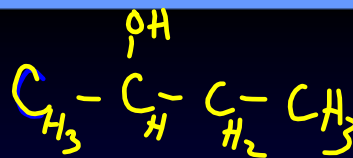
Separated  
compounds  
into  
organic(living  
sources) and  
inorganic  
(mineral  
sources)

$$\begin{array}{c} \text{H} & & \text{O} & & \text{H} \\ & \diagdown & || & & / \\ & \text{N} & - \text{C} & - & \text{N} \\ & / & & & \diagdown \\ \text{H} & & & & \text{H} \end{array}$$

## Alcohols

- Alcohols - a class of organic compounds with an -OH group
  - The -OH functional group in alcohols is called a "hydroxyl" group; thus  $\text{R-OH}$  is the formula
- How is this different from the hydroxide ion?

# Alcohols



- Both IUPAC and common names

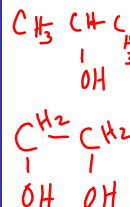
- For IUPAC:

2-butanol

- drop the -e ending of the parent alkane name; add ending of -ol, numbering the position of -OH
- parent is the longest chain that contains the carbon with the hydroxyl attached.

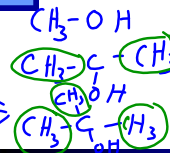
## Properties of Alcohols

- Many aliphatic alcohols used in laboratories, clinics, and industry
  - **Isopropyl alcohol** (2-propanol) is rubbing alcohol; used as antiseptic, and a base for perfume, creams, lotions, and other cosmetics
- Ethylene glycol (1,2-ethanediol) - commonly sold as antifreeze



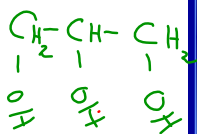
## Alcohols

- Arranged into categories according to the number of R groups attached to the carbon with the hydroxyl
  - 1 R group: primary alcohol
  - 2 R groups: secondary alcohol
  - 3 R groups: tertiary alcohol



## Properties of Alcohols

- Glycerol** (1,2,3-propanetriol) - used as a moistening agent in cosmetics, foods, and drugs; also a component of fats and oils
- Ethyl alcohol (ethanol) used in intoxicating beverages; an important industrial solvent



## Properties of Alcohols

- Denatured alcohol- means it has been made poisonous by the addition of other chemicals, often methyl alcohol (methanol, or wood alcohol). As little as 10 mL of methanol has been known to cause permanent blindness, and 30 ml has resulted in death!!!

